Document Number: 040-00064	Rev	Description	Date	ECO#
Form Instructions	1	SERVICE MANUAL	2/13/2008	00239

Title	**SERVICE MANUAL, FORK ASSEMBLY REPLACEMENT**
Operation Description	**Sub Assembly**

Standards	**Man Occup.**	**Machine Occup.**	**Cycle Time**	**Setup Time**	**Batch Qty**

Equipment List

Equipment	Manufacturer	Qty
1- Fork Assembly	T3 Motion	1
2- 1-1/8 inch wrench	Any	1
3- Adjustable / Crescent wrench	Any	1
4- Diagonal cutter	Any	1
5- Adjustable Pliers	Any	1
6- ½ inch wrench	Any	1
7- Ratchet	Any	1
8- 7/16 socket	Any	1
9- Extension	Any	1
10- Swivel	Any	1
11- 5/32 inch Allen wrench	Any	1

Reference Docs	Document #	Description	Document #	Description
Related Files				
RESP ENGR	**Mark Jones**			

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Item#	Part #	Description	Qty
1	024-00036	Front Fork Assembly	1

Serious electrical shock can occur if precautions are not followed.

- **ALWAYS TURN OFF POWER BREAKER IN GLOVE BOX AND REMOVE POWER MODULES BEFORE PERFORMING ANY ELECTRICAL WORK.**

Power breaker in glove box

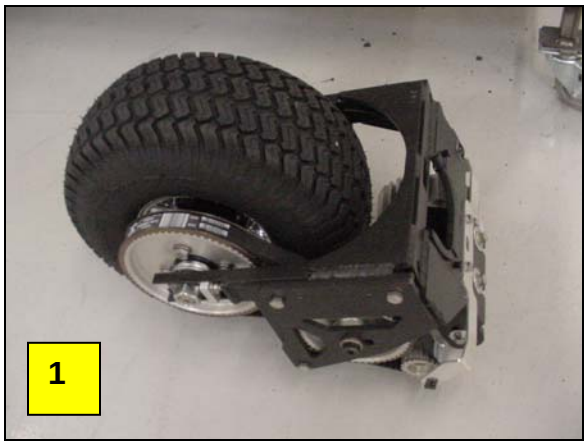
Power modules

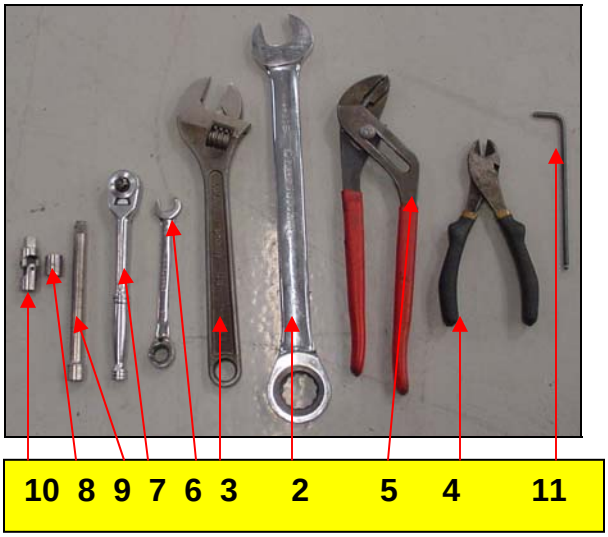
- **ALSO SET THE PARKING BRAKE PRIOR TO ANY WORK.**

Parking brake

WORK INSTRUCTIONS:

1.0 Recommended tools for replacing the fork assembly.
See equipment table above for the details.





2.0 Place the T3 unit on a raised surface sturdy enough to hold the weight of the vehicle, (300 pounds). (Removing the batteries will lighten the vehicle by 40 pounds.) The front wheel should be at least six inches from the ground, but ideally the unit should be two to three feet off the ground for ease of handling the removal and replacement of the fork assembly. A work table like the one shown below is very helpful.

2.1 A stand like this can be placed under the front of the unit can to elevate the front wheel if a work platform as described above is not available.

2.2 Be sure to set the parking brake. For maximum stability do not place the stand too far back under the unit. Place it as shown below.

3.0 Take off the front fender by removing the Allen head fastener with the 5/32 Allen wrench. Remove the left and right axle mounting ones first.

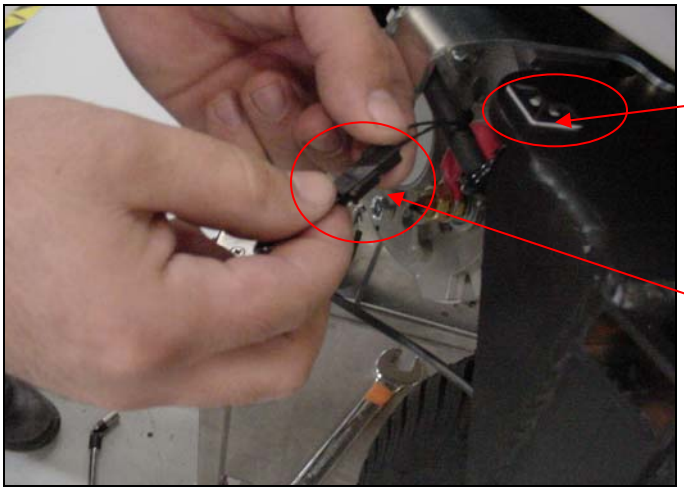
3.1 Next remove the left and right rear side fasteners with the same Allen wrench. If your T3 unit only has these four fasteners attaching fender, remove the fender now.

Note:
Most T3 units have four fasteners attaching the front fender, some have six.

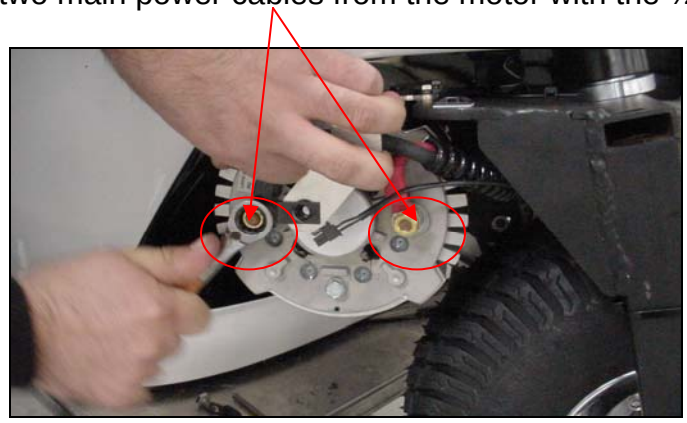
3.2 If your T3 unit has two fasteners on the top of the front fender, remove them now and the fender can be removed.

3.3 An exposed fork with fender removed:

4.0 Cut just the nylon wire tie holding the speedometer wire with the wire cutters to release it from the guide. Unplug the connectors.



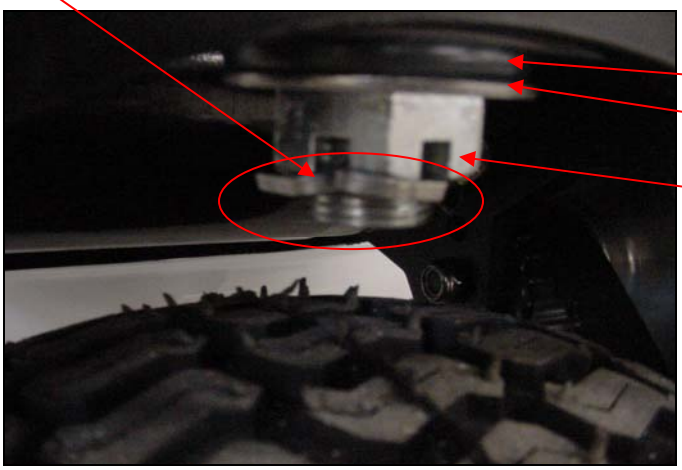
4.1 Remove the two main power cables from the motor with the ½ inch wrench.



Note:
Your motor may have a black coating on the terminal end.
Photo shows an un-coated motor for clarity.

4.2 Remove the 7/16 bolt holding the wire conduit strap using a socket with an extension, swivel and ratchet. The strap may have to be bent forward to access the head of the bolt. This can be done by hand from the front or with a screwdriver from the side if needed.

5.0 Remove this cotter pin with pliers and or diagonal cutters and discard.

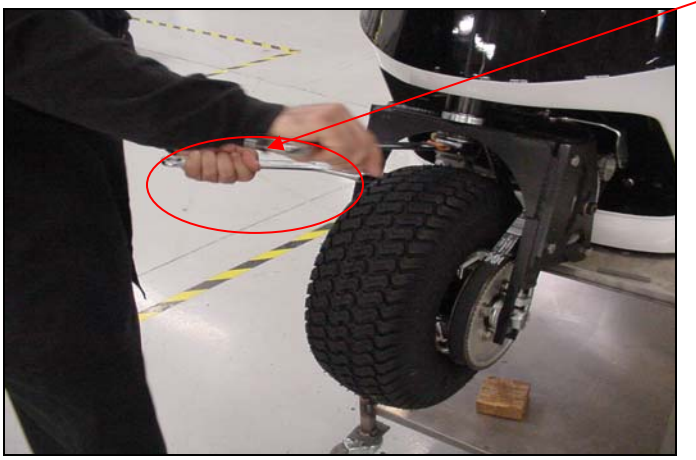


Urethane Bushing

Washer

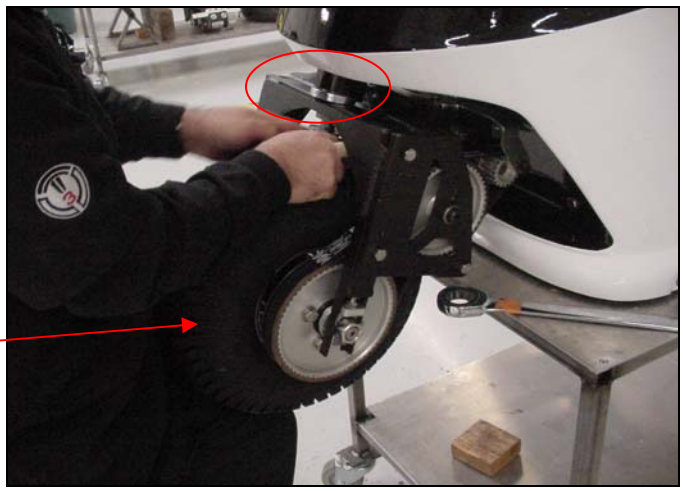
Castle Nut

5.1 Loosen, but do not remove, 1-1/8 inch castle nut with wrench. Use crescent wrench on fork for leverage as shown.



5.2 Support fork assembly while removing castle nut, washer and urethane bushing.

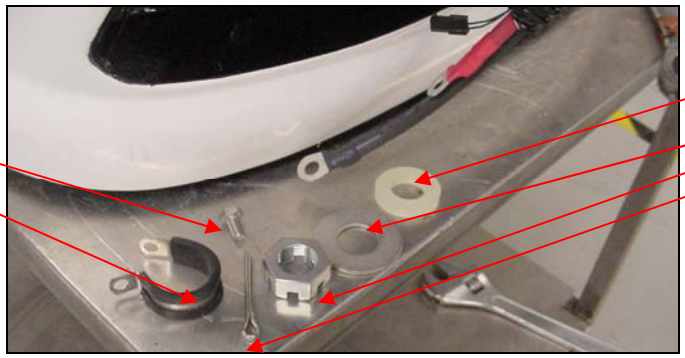
A little force applied to the front of the tire will wedge the assembly onto the shaft so you won't have to support the full weight of the fork while installing the bushing, washer and nut.



5.3 **VERY IMPORTANT! Turn the fork as shown BEFORE removal**. When facing the front of the vehicle, the motor should be on your left and the tire pointing to your right. **Failure to do so will damage the bodywork of the T3 vehicle.**
The fork assembly weighs 50 LBS. Use appropriate caution to avoid injury to self and or vehicle.
Sometimes the fork will slip off the steering shaft easily; sometimes it must be worked off with a side to side rocking motion. Once free of the shaft, lower the fork assembly to the ground making sure the wiring does not snag on anything.

6.0 Installation of the new fork assembly is similar to the steps of removal in reverse.

New Fork Assembly



7/16 Bolt
Wire Conduit Strap

New Fork Assembly Parts

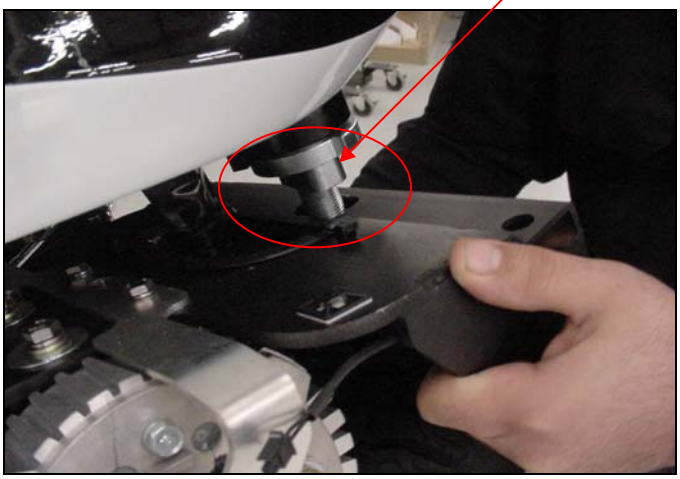
Urethane Bushing
Washer
Castle Nut
Cotter Pin

7.0 Feed the wire bundle through the 4 X 2-1/4 inch rectangular opening in the top of the fork assembly.

Note parts are within easy reach prior to installing fork on vehicle.

Note angle of fork assembly in relation to T3 unit.
Fork must be turned as shown to avoid damage to T3 unit's bodywork.

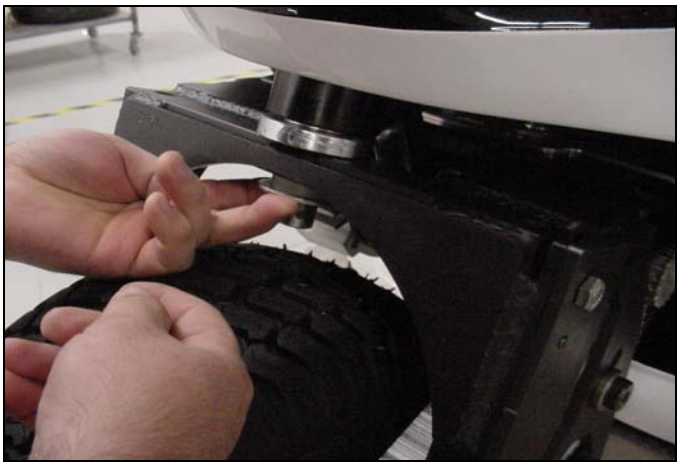
7.1 Slide the fork onto the steering shaft. Be sure the steering shaft is turned to the (vehicles) left so the fork will align to the shaft easily.



7.2 Make sure the fork is fully seated to the shaft as shown here. Continue to support fork while installing hardware even if it feels like it will stay on its own.

7.0 Install the fork mounting hardware. The urethane bushing goes on to the shaft first.

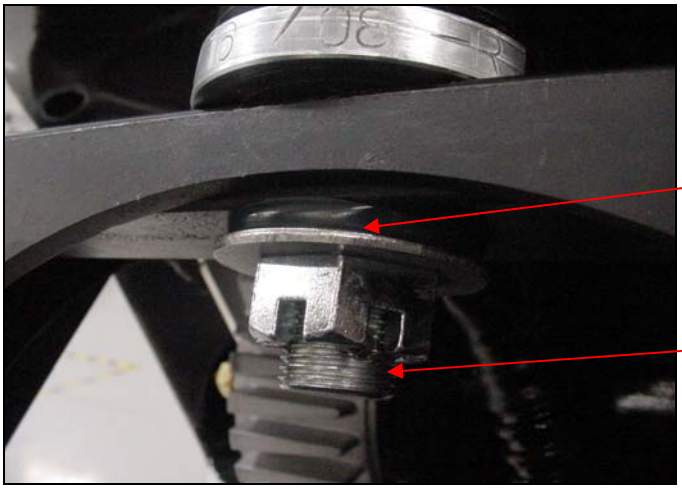
8.1 Slide the washer on the steering shaft.



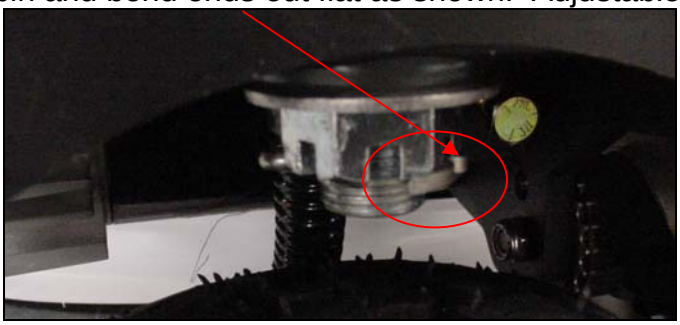
8.2 Thread the castle nut on.

8.3 Tighten the castle nut with the 1-1/8 wrench using the crescent wrench again to leverage against the fork.

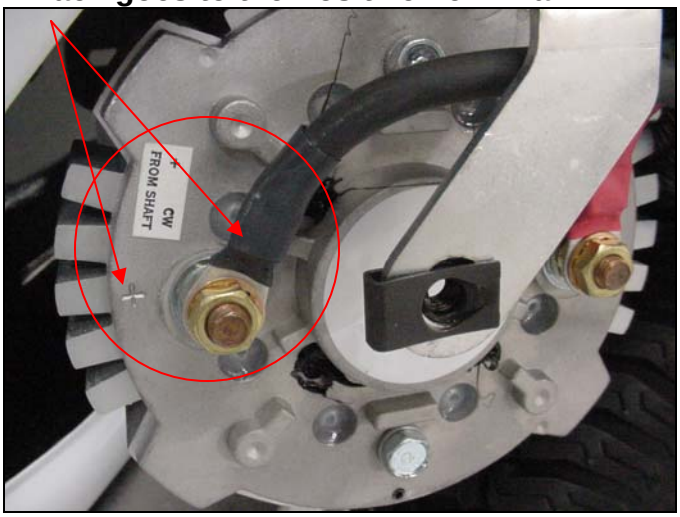
8.4 Tighten the castle nut until it compresses the urethane bushing down to a maximum height of 0.15 inches, (or 3.8mm). **DO NOT UNDERTIGHTEN**. If the slots in the nut do not line up with the hole in the shaft once the bushing is compressed, continue to tighten the nut until they do line up. It is better to over tighten the nut to line up the hole for the cotter pin. Do not loosen the nut to line up the hole.



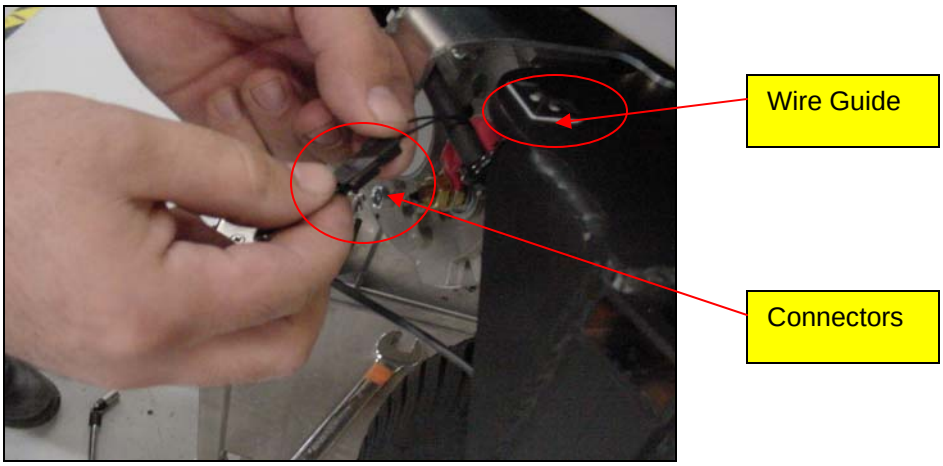
8.5 Install cotter pin and bend ends out flat as shown. Adjustable pliers are recommended.



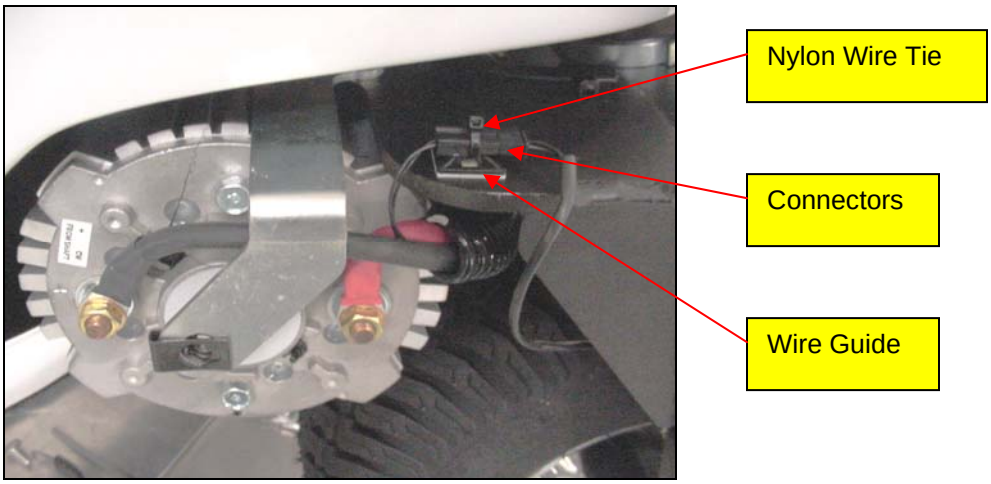
9.0 Connect the wires to the motor. Use the ½ inch wrench.
IMPORTANT: Black goes to the Positive Terminal.



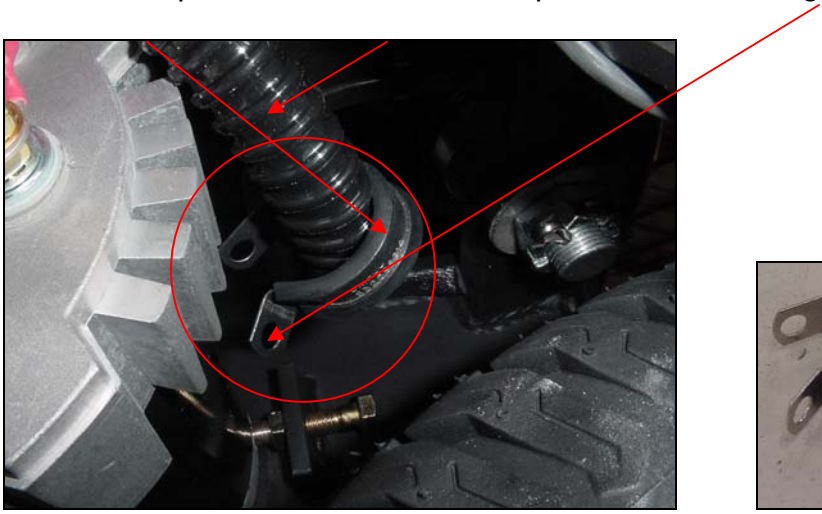
9.1 Plug the speedometer connectors together.



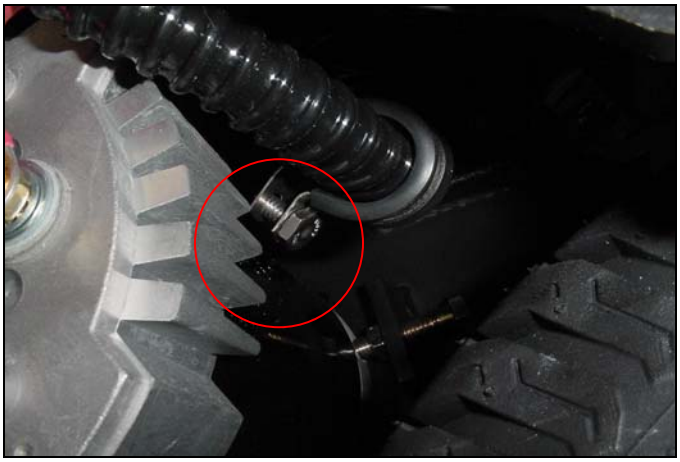
9.2 Mount the speedometer connectors to the wire guide with a nylon wire tie as shown.



10.0 Slide the wire conduit strap over the conduit. Note position of fastening hole.



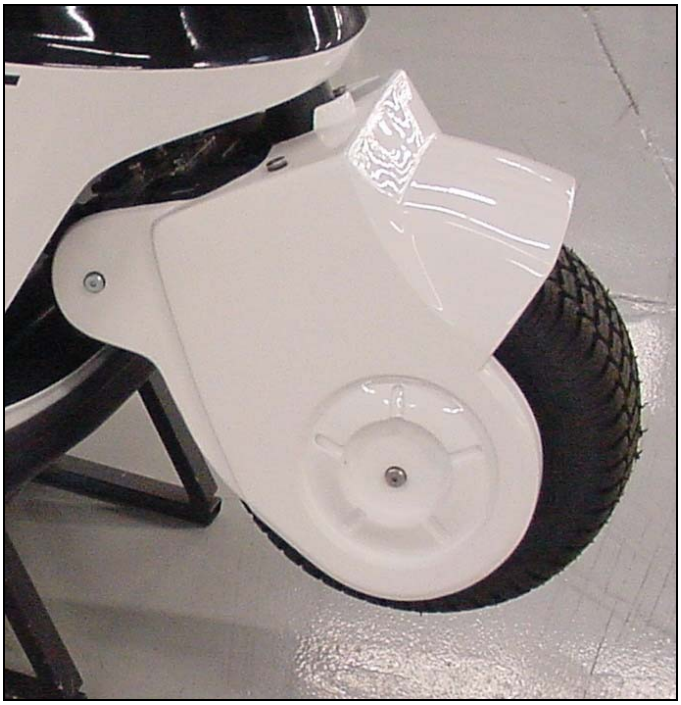
10.1 Start the 7/16 bolt into the threaded hole to fasten the strap to the fork. It might be easier for you to start it by hand. This step may take some patience.



10.2 Using the 7/16 socket wrench with an extension and swivel, tighten the bolt/strap down.

11.0 Test for full range of motion. Slowly turn the fork assembly from lock to lock and make sure the range of motion is smooth, with no binding. If any binding or lack of smoothness is felt, visually check for any obstruction. DO NOT FORCE. The most common cause of binding is due to the routing of the main power wires. You may have to loosen the wire conduit strap and reposition the wires to alleviate any friction.

12.0 Reinstall front fender. Use the same fasteners you removed to take it off. Just reverse the procedure. Do not fully tighten any of the fasteners until all of the fasteners are in place. Do not over tighten the fasteners. Once installed, check the range of motion of the steering again.



For addition information, contact T3 Motion at: (714)-619-3600.